



# FCC TEST REPORT (15.247)

**REPORT NO.:** RF960308H04D

**MODEL NO.:** 21-92955

**RECEIVED:** Aug. 27, 2009

**TESTED:** Sep. 07 to 25, 2009

**ISSUED:** Sep. 28, 2009

**APPLICANT:** Symbol Technologies Inc.

**ADDRESS:** One Symbol Plaza, Holtsville, NY 11742-1300 U.S.A.

**ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**TEST LOCATION:** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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## Table of Contents

1.	CERTIFICATION .....	4
2.	SUMMARY OF TEST RESULTS .....	5
2.1	MEASUREMENT UNCERTAINTY .....	7
3.	GENERAL INFORMATION .....	8
3.1	GENERAL DESCRIPTION OF EUT .....	8
3.2	DESCRIPTION OF TEST MODES .....	10
3.2.1	TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL: .....	11
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS .....	13
3.4	DESCRIPTION OF SUPPORT UNITS.....	14
3.5	CONFIGURATION OF SYSTEM UNDER TEST .....	14
4.	TEST TYPES AND RESULTS (802.11b & g, 2400 ~ 2483.5MHz Band) .....	15
4.1	CONDUCTED EMISSION MEASUREMENT .....	15
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT .....	15
4.1.2	TEST INSTRUMENTS.....	15
4.1.3	TEST PROCEDURES .....	16
4.1.4	DEVIATION FROM TEST STANDARD .....	16
4.1.5	TEST SETUP .....	17
4.1.6	EUT OPERATING CONDITIONS .....	17
4.1.7	TEST RESULTS .....	18
4.2	RADIATED EMISSION MEASUREMENT .....	20
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT .....	20
4.2.2	TEST INSTRUMENTS.....	21
4.2.3	TEST PROCEDURES .....	22
4.2.4	DEVIATION FROM TEST STANDARD .....	22
4.2.5	TEST SETUP .....	23
4.2.6	EUT OPERATING CONDITIONS .....	23
	Below 1GHz Test Data .....	24
4.2.7	TEST RESULTS .....	24
	Above 1GHz Test Data .....	25
4.2.8	TEST RESULTS .....	25
4.3	MAXIMUM PEAK OUTPUT POWER.....	45
4.3.1	LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT .....	45
4.3.2	INSTRUMENTS.....	45
4.3.3	TEST PROCEDURES .....	45
4.3.4	DEVIATION FROM TEST STANDARD .....	45
4.3.5	TEST SETUP .....	46
4.3.6	EUT OPERATING CONDITIONS .....	46
4.3.7	TEST RESULTS .....	47



5.	TEST TYPES AND RESULTS (802.11a, 5725~5850MHz Band).....	49
5.1	CONDUCTED EMISSION MEASUREMENT .....	49
5.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT .....	49
5.1.2	TEST INSTRUMENTS.....	49
5.1.3	TEST PROCEDURES .....	50
5.1.4	DEVIATION FROM TEST STANDARD .....	50
5.1.5	TEST SETUP .....	51
5.1.6	EUT OPERATING CONDITIONS .....	51
5.1.7	TEST RESULTS .....	52
5.2	Radiated Emission Measurement .....	54
5.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT .....	54
5.2.2	TEST INSTRUMENTS.....	55
5.2.3	TEST PROCEDURES .....	56
5.2.4	DEVIATION FROM TEST STANDARD .....	56
5.2.5	TEST SETUP .....	57
5.2.6	EUT OPERATING CONDITIONS .....	57
Below 1GHz Test Data .....		58
5.2.7	TEST RESULTS .....	58
Above 1GHz Test Data .....		59
5.2.8	TEST RESULTS .....	59
5.3	MAXIMUM PEAK OUTPUT POWER.....	62
5.3.1	LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT .....	62
5.3.2	INSTRUMENTS.....	62
5.3.3	TEST PROCEDURES .....	62
5.3.4	DEVIATION FROM TEST STANDARD .....	62
5.3.5	TEST SETUP .....	63
5.3.6	EUT OPERATING CONDITIONS .....	63
5.3.7	TEST RESULTS .....	64
6.	INFORMATION ON THE TESTING LABORATORIES .....	65
7.	APPENDIX-A- MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .....	66



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## 1. CERTIFICATION

**PRODUCT:** 802.11a/b/g WLAN SDIO Radio Module  
**BRAND NAME:** Symbol Technologies Inc.  
**MODEL NO.:** 21-92955  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**TESTED:** Sep. 07 to 25, 2009  
**APPLICANT:** Symbol Technologies Inc.  
**STANDARDS:** FCC Part 15, Subpart C (Section 15.247),  
ANSI C63.4-2003

The above equipment (Model: 21-92955) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY** : Midoli Peng , **DATE:** Sep. 28, 2009  
( Midoli Peng, Specialist )

**TECHNICAL ACCEPTANCE** : Hank Chung , **DATE:** Sep. 28, 2009  
Responsible for RF ( Hank Chung, Deputy Manager )

**APPROVED BY** : May Chen , **DATE:** Sep. 28, 2009  
( May Chen, Deputy Manager )



## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 802.11b & g, 2412~2462MHz Band

<b>APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)</b>			
<b>Standard Section</b>	<b>Test Type and Limit</b>	<b>Result</b>	<b>Remark</b>
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -18.37dB at 16.652MHz
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -4.35dB at 2390.00MHz



For 802.11a, 5725~5850MHz Band

<b>APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)</b>			
<b>Standard Section</b>	<b>Test Type and Limit</b>	<b>Result</b>	<b>Remark</b>
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -18.39dB at 16.652MHz
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -2.22dB at 2390.00MHz

**NOTE:**

1. The EUT was operating in 2.412 ~ 2.462GHz, 5.15~5.35GHz, 5.47~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 2.412 ~ 2.462GHz and 5.725 ~ 5.850GHz. For the 5.15~5.35GHz and 5.47~5.725GHz RF parameters was recorded in another test report.
2. This report is prepared for FCC class II permissive change. Only conducted emission, radiated emission and maximum peak output power were presented in this test report.



## 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Measurement	Value
Conducted emissions	2.44 dB
Radiated emissions (30MHz-1GHz)	3.94 dB
Radiated emissions (1GHz -18GHz)	2.49 dB
Radiated emissions (18GHz -40GHz)	2.70 dB



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	802.11a/b/g WLAN SDIO Radio Module
<b>MODEL NO.</b>	21-92955
<b>FCC ID</b>	H9P2192955
<b>POWER SUPPLY</b>	DC 3.3V +/-5% from host equipment
<b>MODULATION TYPE</b>	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
<b>MODULATION TECHNOLOGY</b>	DSSS, OFDM
<b>TRANSFER RATE</b>	802.11b:11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps
<b>FREQUENCY RANGE</b>	For 15.407 802.11a: 5.10 ~ 5.32GHz and 5.50 ~ 5.700GHz For 15.247 802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.745 ~ 5.825GHz
<b>NUMBER OF CHANNEL</b>	For 15.407 802.11a (5.15 ~ 5.35GHz):8 802.11a (5.47 ~ 5.725GHz):11 For 15.247 802.11b & 802.11g: 11 802.11a (5.725 ~ 5.850GHz):5
<b>CHANNEL SPACING</b>	802.11b & 802.11g: 5MHz 802.11a: 20MHz
<b>OUTPUT POWER</b>	For 802.11b: 44.668mW For 802.11g: 109.648mW For 802.11a (FCC15.247): 107.152mW For 802.11a (FCC15.407): 36.058mW
<b>DATA CABLE</b>	NA
<b>ANTENNA TYPE</b>	Please see note 3 (on next page)
<b>I/O PORTS</b>	NA
<b>ASSOCIATED DEVICES</b>	NA





**NOTE:**

1. This report is based on ADT report with Report No.:RF960308H04. The original report was issued by Advance Data Technology Corp. (ADT Corp.) on March 29, 2007. ADT Corp. is one of Bureau Veritas family and she has fully transferred all its test facilities, staffs & service system to Bureau Veritas Consumer Products Services (Hong Kong) Limited, Taoyuan Branch in 2008. And this report is prepared for FCC class II permissive change. The difference compared with the original report design is as the following:

- ◆ Add Flip Flop to delay one signal to fix the memory self refresh
- ◆ Shield Modification to improved Harmonic performance in 5GHz

2. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.

3. There are two crystals have been pre-tested in our facility as following:

Mode	Frequency
A	<b>Crystal 1: Brand : RIVER, Model : FCXO-05-40MJ61185</b>
B	Crystal 2: Brand : SWIRD, Model : OSC913200JLS

The function and circuit of above crystals are identical to each other except for the brand.

The worse case was found in mode A. The final test data was recorded in this report.

4. There is one antenna provided to this EUT, please refer to the following table:

Model No.	Symbol P/N	Frequency Range	Gain (dBi)	Cable Loss (dB)	Net Gain (dBi)	Antenna Type	Connector
C802-5100 01-A	ML-2452-A	2.4GHz	3	0.5	2.5	Dipole	RP-SMA MALE
	PA2-01	5GHz	4	1.2	2.8		

5. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.



### 3.2 DESCRIPTION OF TEST MODES

#### Operated in 2400 ~ 2483.5MHz band:

For 802.11b/g: Eleven channels are provided to this EUT.

Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

#### Operated in 5725 ~ 5850MHz band:

For 802.11a (5725 ~ 5850MHz band): Five channels are provided to this EUT.

Channel	Frequency
149	5745 MHz
153	5765 MHz
157	5785 MHz
161	5805 MHz
165	5825 MHz

### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
-	√	√	√	√	NA

Where PLC: Power Line Conducted Emission

RE<1G RE: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

#### **Power Line Conducted Emission Test:**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6
802.11a	149 to 165	157	OFDM	BPSK	6

#### **Radiated Emission Test (Below 1 GHz):**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1	DSSS	DBPSK	1
802.11a	149 to 165	165	OFDM	BPSK	6

#### **Radiated Emission Test (Above 1 GHz):**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	CCK	1
802.11g	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6

Channel 2 and 10 required by manufacture.



**Antenna Port Conducted Measurement:**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6

Channel 2 and 10 required by manufacture.

### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an 802.11a/b/g WLAN SDIO Radio Module. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

#### **FCC Part 15, Subpart C. (15.247)**

#### **ANSI C63.4-2003**

All test items have been performed and recorded as per the above standards.

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



### 3.4 DESCRIPTION OF SUPPORT UNITS

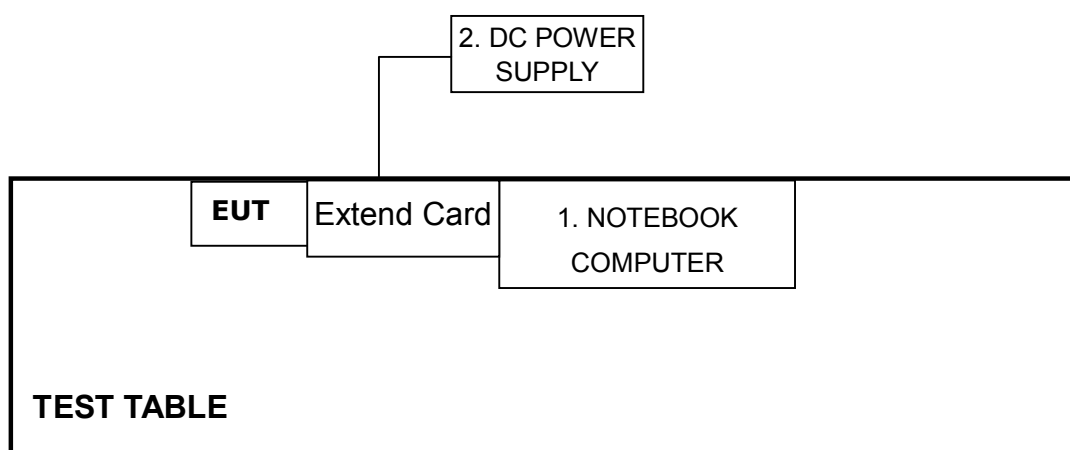
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	IBM	2672	9949APL	FCC DoC
2	DC POWER SUPPLY	GW	GPC-30600	7715073	FCC DoC
3	Extend Card	USI	JEDI ADAPTOR BOARD_DVT Rev1.4	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA
3	NA

**NOTE:** All power cords of the above support units are non shielded (1.8m).

### 3.5 CONFIGURATION OF SYSTEM UNDER TEST





## 4. TEST TYPES AND RESULTS (802.11b & g, 2400 ~ 2483.5MHz Band)

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
  2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
  3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 23, 2009	Mar. 22, 2010
Line-Impedance Stabilization Network(for Peripheral)	ENV-216	100071	Nov. 26, 2008	Nov. 25, 2009
Line-Impedance Stabilization Network (for EUT)	ESH3-Z5	848773/004	Nov. 05, 2008	Nov. 04, 2009
RF Cable (JYBAO)	5DFB	COBCAB-001	Aug. 15, 2009	Aug. 14, 2010
50 ohms Terminator	50	3	Nov. 05, 2008	Nov. 04, 2009
Software	BV ADT_Cond_V7.3 .7	NA	NA	NA

**Note:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.



#### 4.1.3 TEST PROCEDURES

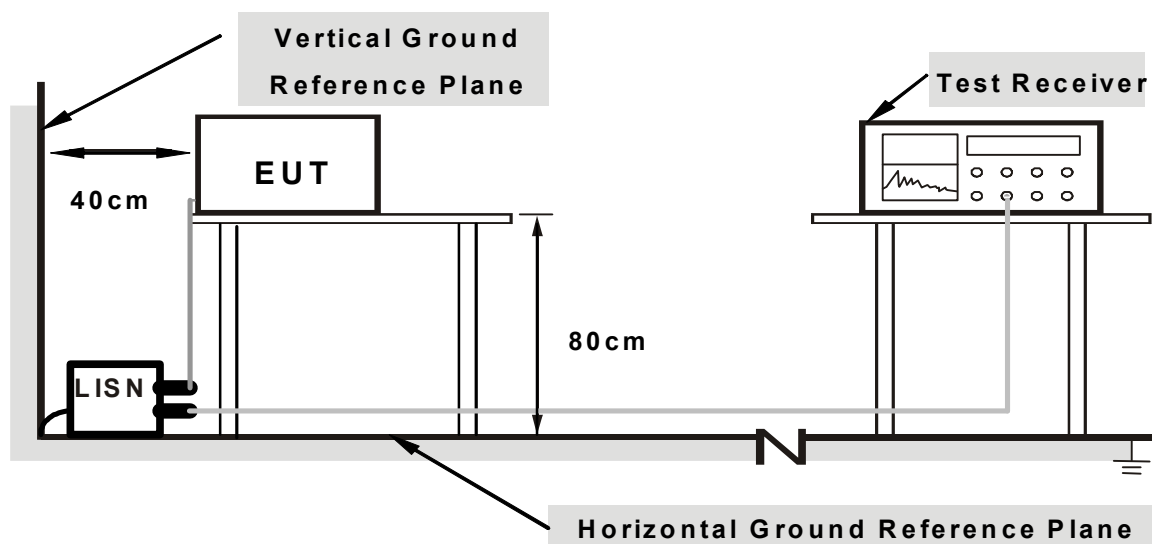
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation



#### 4.1.5 TEST SETUP



**Note: 1. Support units were connected to second LISN.**

**2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.1.6 EUT OPERATING CONDITIONS

- a. Connect the EUT with the support unit 1 (Notebook computer) which placed on a testing table.
- b. The support unit 1 (Notebook computer) ran a test program “Prism Engineering” to enable EUT under transmission condition continuously.

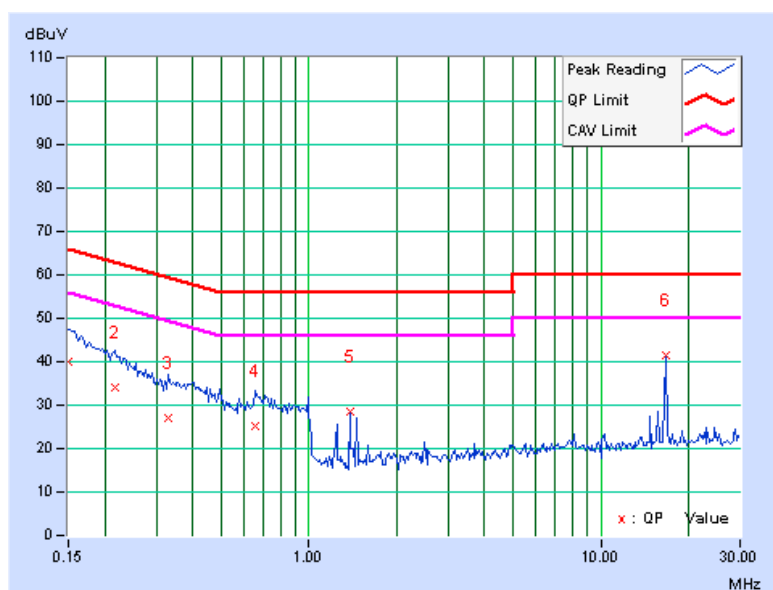


### 4.1.7 TEST RESULTS

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line (L)
MODULATION TYPE	OFDM	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 61%RH, 972hPa	TESTED BY	Phoenix Huang

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.150	9.74	30.36	-	40.10	-	66.00
2	0.216	9.75	24.19	-	33.94	-	62.96	52.96	-29.02	-
3	0.330	9.74	17.41	-	27.15	-	59.46	49.46	-32.31	-
4	0.658	9.75	15.45	-	25.20	-	56.00	46.00	-30.80	-
5	1.379	9.77	18.81	-	28.58	-	56.00	46.00	-27.42	-
+6	16.652	10.00	31.47	-	41.47	-	60.00	50.00	-18.53	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



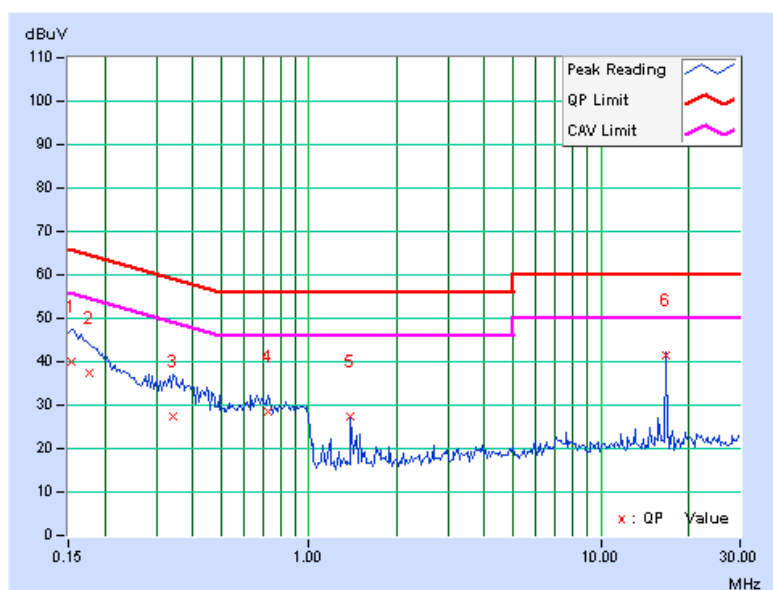


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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Neutral (N)
MODULATION TYPE	OFDM	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 61%RH, 972hPa	TESTED BY	Phoenix Huang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	9.73	30.24	-	39.97	-	65.79	55.79	-25.81	-
2	0.177	9.73	27.69	-	37.42	-	64.61	54.61	-27.19	-
3	0.341	9.73	17.61	-	27.34	-	59.17	49.17	-31.83	-
4	0.724	9.74	18.96	-	28.70	-	56.00	46.00	-27.30	-
5	1.391	9.76	17.77	-	27.53	-	56.00	46.00	-28.47	-
<b>+6</b>	<b>16.652</b>	<b>10.08</b>	<b>31.55</b>	-	<b>41.63</b>	-	<b>60.00</b>	<b>50.00</b>	<b>-18.37</b>	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.





## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



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#### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 9, 2008	Dec. 8, 2009
Agilent PSA Spectrum Analyzer	E4446A	MY46180622	Apr. 24, 2009	Apr. 23, 2010
HP Pre_Amplifier	8449B	3008A01923	Nov. 10, 2008	Nov. 9, 2009
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Sep. 9, 2009	Sep. 8, 2010
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	April 29, 2009	April 28, 2010
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 09, 2008	Dec. 08, 2009
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2009	Jan. 21, 2010
RF Switches	EMH-011	08009	Oct. 07, 2008	Oct. 06, 2009
RF CABLE (Chaintek)	Sucoflex 106	28077	Aug. 15, 2009	Aug. 14, 2010
RF Cable	8DFB	STCCAB-30M-1GHz	Oct. 07, 2008	Oct. 06, 2009
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
2. The horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.  
3. The test was performed in Open Site No. C.  
4. The FCC Site Registration No. is 656396.  
5. The VCCI Site Registration No. is R-1626.  
6. The CANADA Site Registration No. is IC 7450G-3.



### 4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

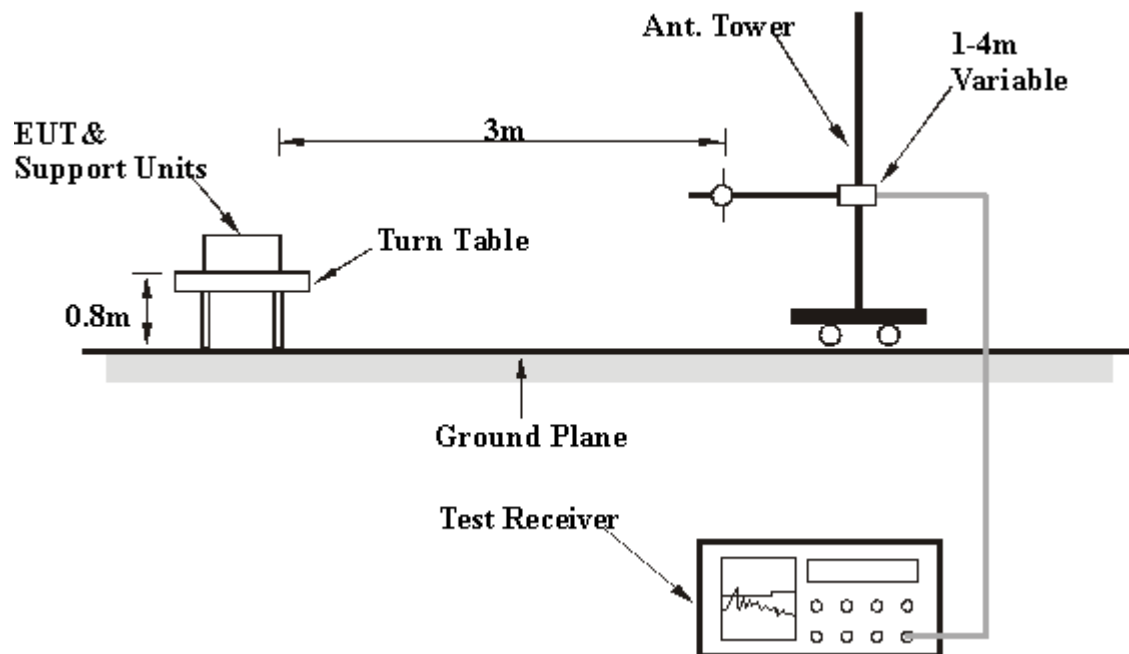
**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6



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### Below 1GHz Test Data

#### 4.2.7 TEST RESULTS

#### BELOW 1GHz WORST-CASE DATA : 802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	28.0deg. C, 62.0%RH 965hPa	TESTED BY	Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	200.00	29.47 QP	43.50	-14.03	1.77 H	229	17.08	12.39
2	300.00	32.52 QP	46.00	-13.48	1.00 H	169	15.74	16.78
3	400.00	30.20 QP	46.00	-15.80	1.00 H	175	10.70	19.50
4	500.00	28.40 QP	46.00	-17.60	1.00 H	250	5.91	22.49
5	666.67	31.75 QP	46.00	-14.25	1.45 H	103	6.06	25.69
6	833.33	31.90 QP	46.00	-14.10	1.00 H	77	3.42	28.48

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	200.00	25.43 QP	43.50	-18.07	1.00 V	140	13.04	12.39
2	300.00	28.50 QP	46.00	-17.50	1.00 V	261	11.72	16.78
3	400.00	27.09 QP	46.00	-18.91	1.12 V	34	7.59	19.50
4	500.00	27.92 QP	46.00	-18.08	1.00 V	202	5.43	22.49
5	666.67	30.32 QP	46.00	-15.68	1.60 V	188	4.63	25.69
6	833.33	31.56 QP	46.00	-14.44	1.34 V	257	3.08	28.48

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.





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### Above 1GHz Test Data

#### 4.2.8 TEST RESULTS

##### 802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.28 PK	74.00	-18.72	1.28 H	230	25.00	30.28
2	2390.00	43.86 AV	54.00	-10.14	1.28 H	230	13.58	30.28
3	*2412.00	95.33 PK			1.28 H	228	64.97	30.36
4	*2412.00	91.31 AV			1.28 H	228	60.95	30.36
5	4824.00	48.47 PK	74.00	-25.53	1.33 H	62	11.68	36.79
6	4824.00	43.25 AV	54.00	-10.75	1.33 H	62	6.46	36.79
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.93 PK	74.00	-16.07	1.70 V	101	27.65	30.28
2	2390.00	48.68 AV	54.00	-5.32	1.70 V	101	18.40	30.28
3	*2412.00	107.47 PK			1.60 V	101	77.11	30.36
4	*2412.00	103.69 AV			1.60 V	101	73.33	30.36
5	4824.00	51.85 PK	74.00	-22.15	1.20 V	3	15.06	36.79
6	4824.00	46.30 AV	54.00	-7.70	1.20 V	3	9.51	36.79

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	95.70 PK			1.28 H	360	65.24	30.46
2	*2437.00	91.78 AV			1.28 H	360	61.32	30.46
3	4874.00	48.32 PK	74.00	-25.68	1.34 H	70	11.40	36.92
4	4874.00	44.01 AV	54.00	-9.99	1.34 H	70	7.09	36.92
5	7311.00	51.24 PK	74.00	-22.76	1.02 H	247	8.10	43.14
6	7311.00	38.24 AV	54.00	-15.76	1.02 H	247	-4.90	43.14
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.25 PK			1.61 V	48	75.79	30.46
2	*2437.00	102.42 AV			1.61 V	48	71.96	30.46
3	4874.00	52.21 PK	74.00	-21.79	1.54 V	298	15.29	36.92
4	4874.00	46.99 AV	54.00	-7.01	1.54 V	298	10.07	36.92
5	7311.00	51.24 PK	74.00	-22.76	1.47 V	85	8.10	43.14
6	7311.00	38.68 AV	54.00	-15.32	1.47 V	85	-4.46	43.14

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

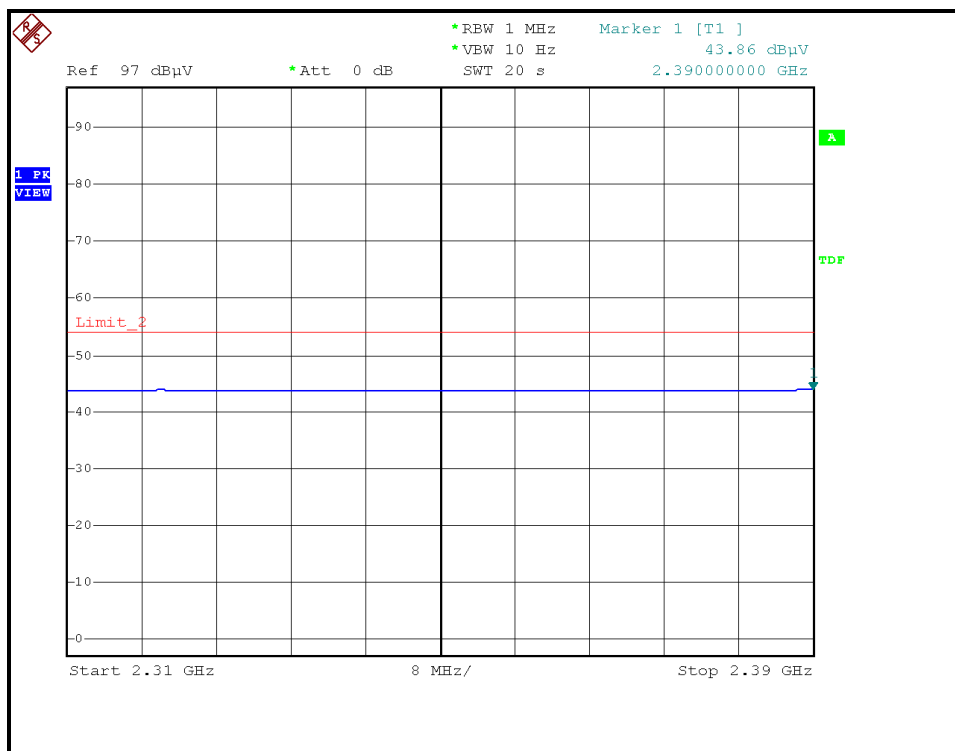
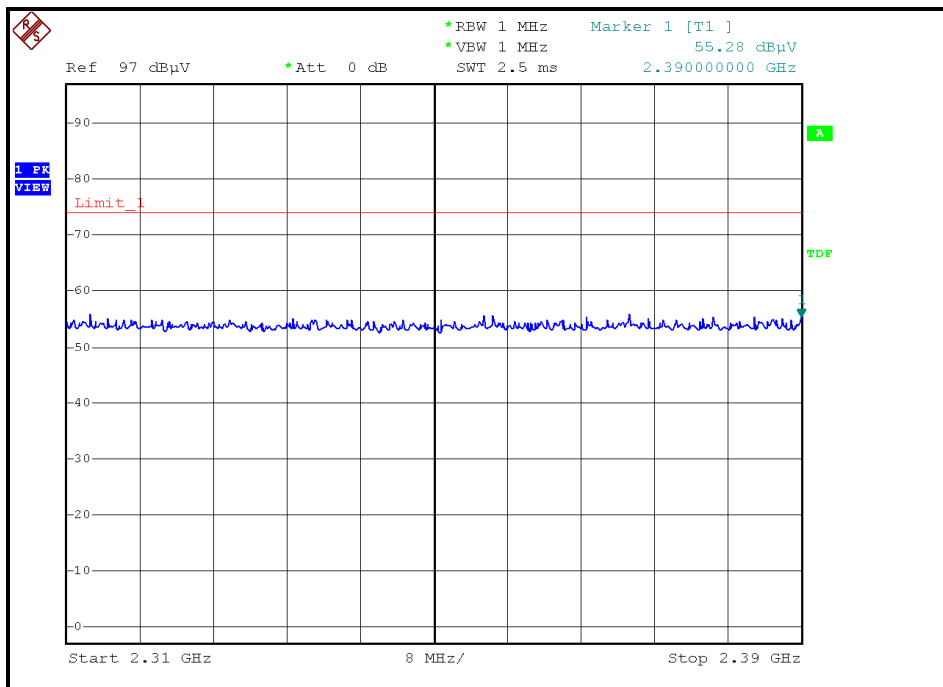
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NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	95.60 PK			1.24 H	194	65.05	30.55
2	*2462.00	91.40 AV			1.24 H	194	60.85	30.55
3	2483.50	55.77 PK	74.00	-18.23	1.24 H	200	25.14	30.63
4	2483.50	44.25 AV	54.00	-9.75	1.24 H	200	13.62	30.63
5	4924.00	48.20 PK	74.00	-25.80	1.00 H	85	11.14	37.06
6	4924.00	43.01 AV	54.00	-10.99	1.00 H	85	5.95	37.06
7	7386.00	51.47 PK	74.00	-22.53	1.54 H	247	8.34	43.13
8	7386.00	38.97 AV	54.00	-15.03	1.54 H	247	-4.16	43.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.65 PK			1.30 V	85	76.10	30.55
2	*2462.00	102.82 AV			1.30 V	85	72.27	30.55
3	2483.50	56.78 PK	74.00	-17.22	1.30 V	85	26.15	30.63
4	2483.50	45.53 AV	54.00	-8.47	1.30 V	85	14.90	30.63
5	4924.00	52.01 PK	74.00	-21.99	1.65 V	96	14.95	37.06
6	4924.00	45.99 AV	54.00	-8.01	1.65 V	96	8.93	37.06
7	7386.00	52.21 PK	74.00	-21.79	1.02 V	326	9.08	43.13
8	7386.00	39.40 AV	54.00	-14.60	1.02 V	326	-3.73	43.13

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



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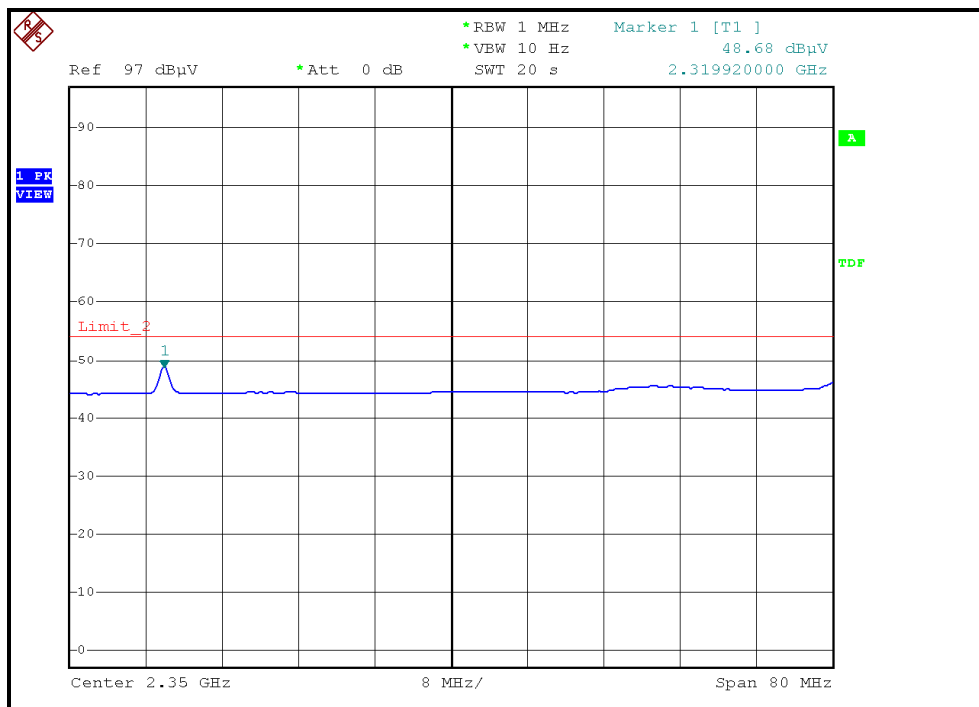
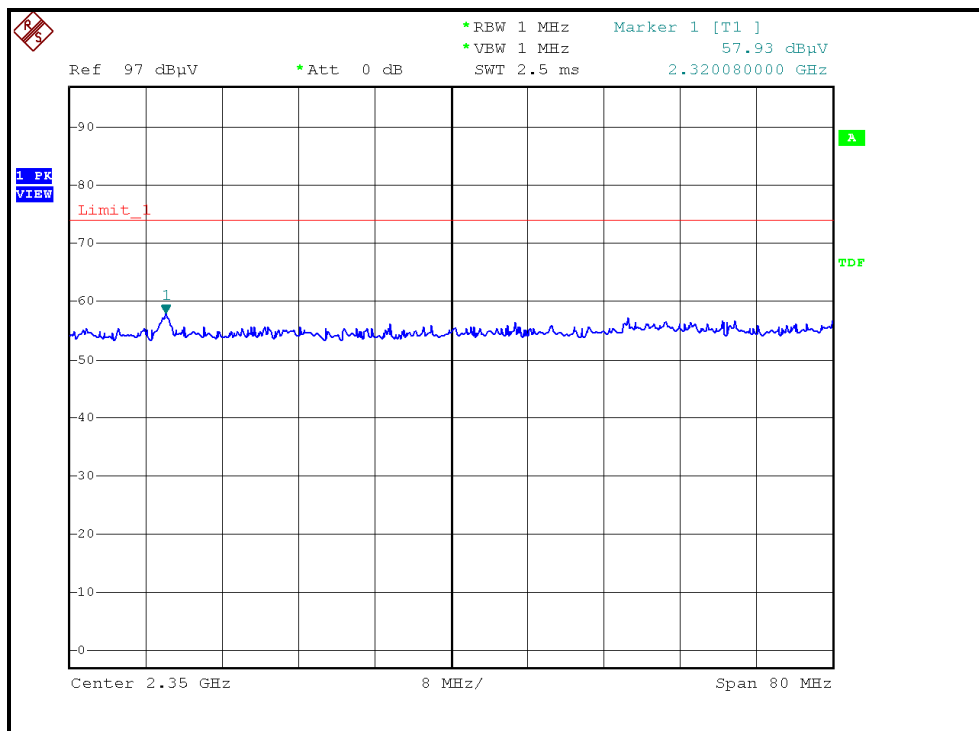
### RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL )





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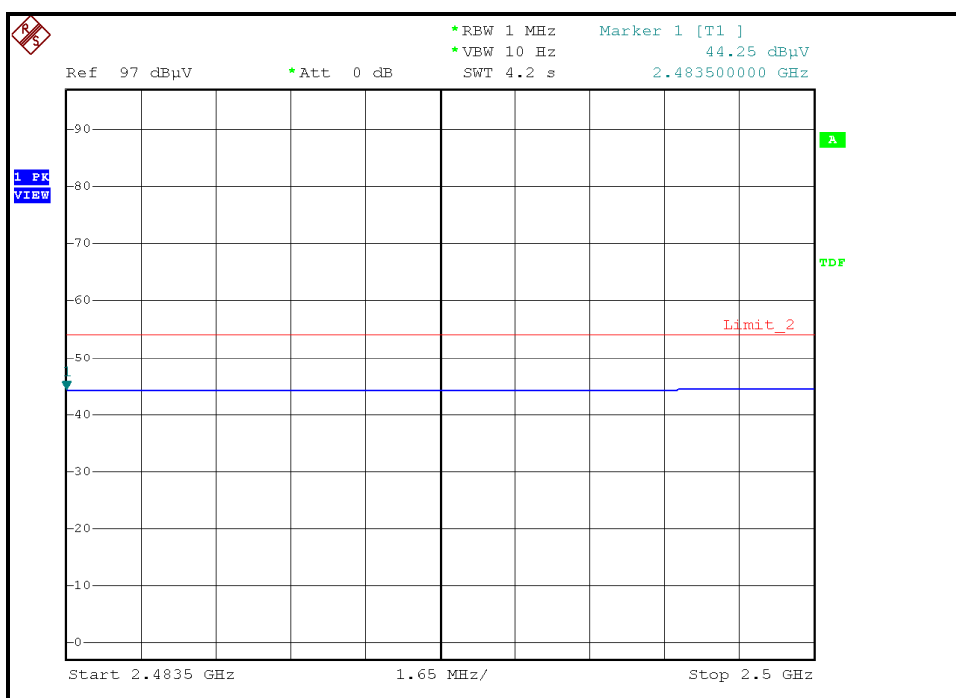
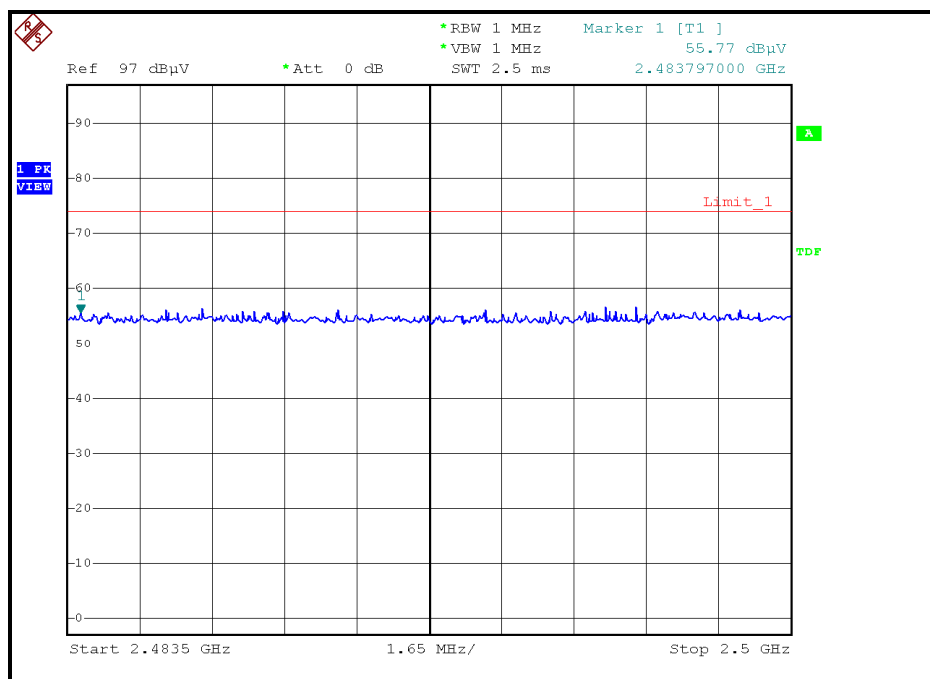
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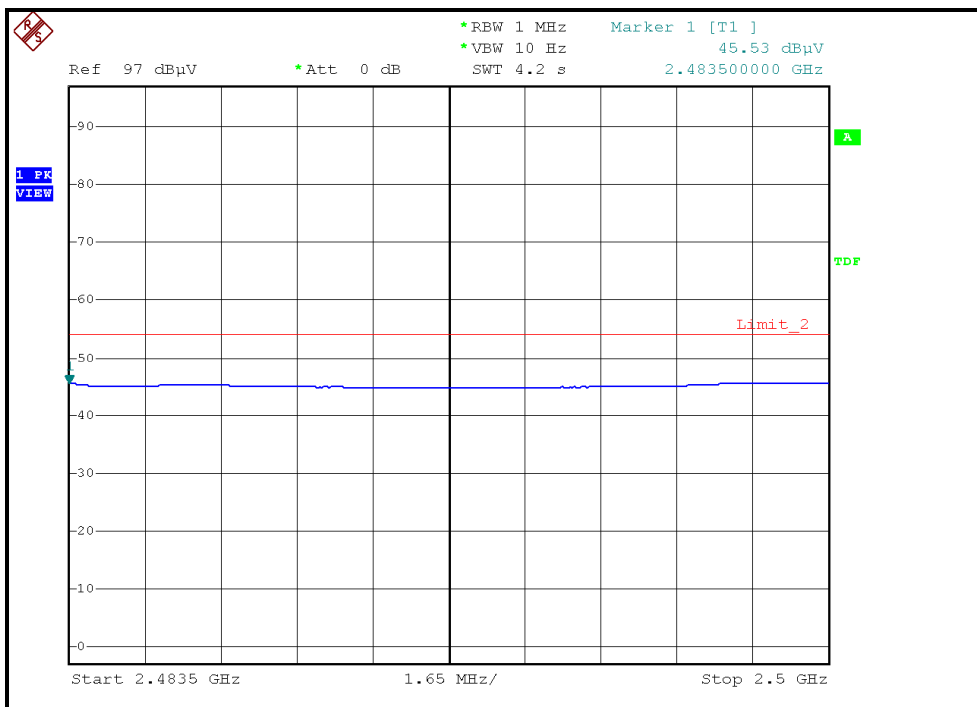
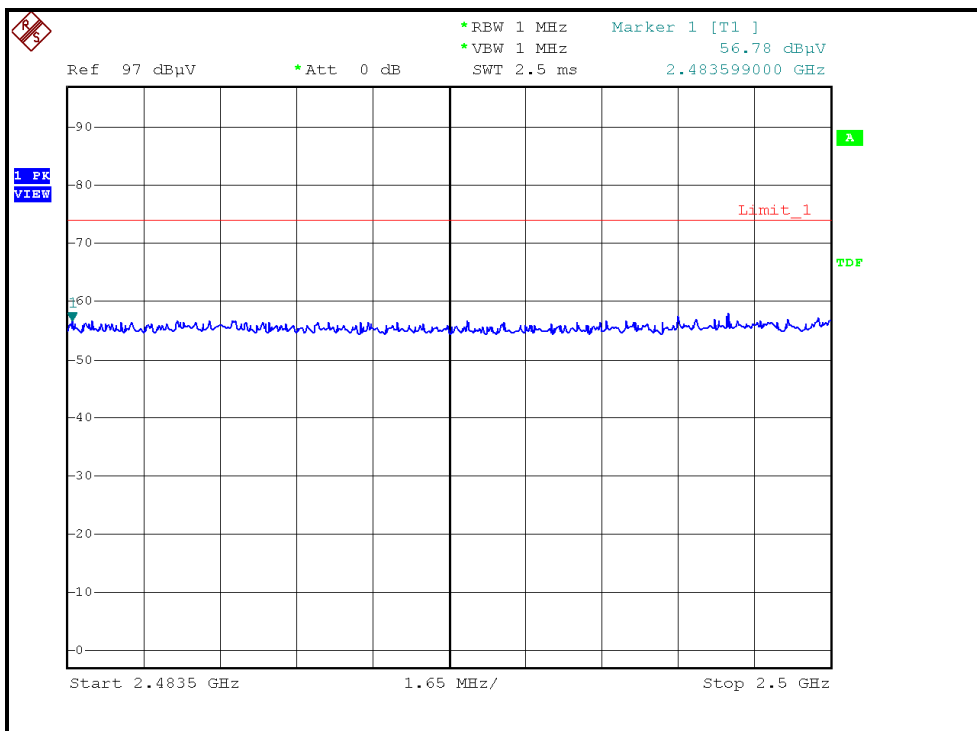
### RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL )





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### RESTRICTED BANDEDGE (802.11b MODE, CH11, VERTICAL )





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### 802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.77 PK	74.00	-13.23	1.29 H	229	30.49	30.28
2	2390.00	44.54 AV	54.00	-9.46	1.29 H	229	14.26	30.28
3	*2412.00	96.70 PK			1.29 H	229	66.34	30.36
4	*2412.00	87.31 AV			1.29 H	229	56.95	30.36
5	4824.00	44.54 PK	74.00	-29.46	1.54 H	89	7.75	36.79
6	4824.00	33.86 AV	54.00	-20.14	1.54 H	89	-2.93	36.79
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2319.92	59.11 PK	74.00	-14.89	1.60 V	101	29.09	30.02
2	2319.92	49.41 AV	54.00	-4.59	1.60 V	101	19.39	30.02
<b>3</b>	<b>2390.00</b>	<b>69.65 PK</b>	<b>74.00</b>	<b>-4.35</b>	<b>1.60 V</b>	<b>101</b>	<b>39.37</b>	<b>30.28</b>
4	2390.00	48.77 AV	54.00	-5.23	1.60 V	101	18.49	30.28
5	*2412.00	107.53 PK			1.60 V	101	77.17	30.36
6	*2412.00	97.96 AV			1.60 V	101	67.60	30.36
7	4824.00	47.21 PK	74.00	-26.79	1.54 V	84	10.42	36.79
8	4824.00	34.23 AV	54.00	-19.77	1.54 V	84	-2.56	36.79

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.





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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	56.24 PK	74.00	-17.76	1.29 H	192	25.96	30.28
2	2390.00	44.20 AV	54.00	-9.80	1.29 H	192	13.92	30.28
3	*2417.00	97.71 PK			1.29 H	192	67.33	30.38
4	*2417.00	88.12 AV			1.29 H	192	57.74	30.38
5	4834.00	44.65 PK	74.00	-29.35	1.05 H	219	7.83	36.82
6	4834.00	34.01 AV	54.00	-19.99	1.05 H	219	-2.81	36.82
7	7251.00	50.87 PK	74.00	-23.13	1.58 H	9	7.73	43.14
8	7251.00	38.32 AV	54.00	-15.68	1.58 H	9	-4.82	43.14

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2319.92	58.32 PK	74.00	-15.68	1.61 V	101	28.30	30.02
2	2319.92	49.75 AV	54.00	-4.25	1.61 V	101	19.73	30.02
3	2390.00	67.51 PK	74.00	-6.49	1.61 V	101	37.23	30.28
4	2390.00	49.35 AV	54.00	-4.65	1.61 V	101	19.07	30.28
5	*2417.00	108.59 PK			1.61 V	101	78.21	30.38
6	*2417.00	99.13 AV			1.61 V	101	68.75	30.38
7	4834.00	47.96 PK	74.00	-26.04	1.50 V	223	11.14	36.82
8	4834.00	35.01 AV	54.00	-18.99	1.50 V	223	-1.81	36.82
9	7251.00	51.35 PK	74.00	-22.65	1.11 V	210	8.21	43.14
10	7251.00	39.65 AV	54.00	-14.35	1.11 V	210	-3.49	43.14

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.42 PK			1.28 H	193	69.96	30.46
2	*2437.00	90.90 AV			1.28 H	193	60.44	30.46
3	4874.00	44.89 PK	74.00	-29.11	1.59 H	65	7.97	36.92
4	4874.00	34.26 AV	54.00	-19.74	1.59 H	65	-2.66	36.92
5	7311.00	51.24 PK	74.00	-22.76	1.74 H	112	8.10	43.14
6	7311.00	39.68 AV	54.00	-14.32	1.74 H	112	-3.46	43.14
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	111.06 PK			1.34 V	85	80.60	30.46
2	*2437.00	101.70 AV			1.34 V	85	71.24	30.46
3	4874.00	48.20 PK	74.00	-25.80	1.36 V	62	11.28	36.92
4	4874.00	35.23 AV	54.00	-18.77	1.36 V	62	-1.69	36.92
5	7311.00	52.24 PK	74.00	-21.76	1.58 V	7	9.10	43.14
6	7311.00	39.10 AV	54.00	-14.90	1.58 V	7	-4.04	43.14

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 10	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2457.00	95.91 PK			1.11 H	194	65.38	30.53
2	*2457.00	86.48 AV			1.11 H	194	55.95	30.53
3	2483.50	60.31 PK	74.00	-13.69	1.31 H	194	29.68	30.63
4	2483.50	45.10 AV	54.00	-8.90	1.31 H	194	14.47	30.63
5	4914.00	44.21 PK	74.00	-29.79	1.11 H	223	7.18	37.03
6	4914.00	33.65 AV	54.00	-20.35	1.11 H	223	-3.38	37.03
7	7371.00	51.24 PK	74.00	-22.76	1.54 H	268	8.11	43.13
8	7371.00	39.10 AV	54.00	-14.90	1.54 H	268	-4.03	43.13

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2457.00	108.39 PK			1.31 V	86	77.86	30.53
2	*2457.00	98.83 AV			1.31 V	86	68.30	30.53
3	2483.50	67.81 PK	74.00	-6.19	1.31 V	86	37.18	30.63
4	2483.50	48.08 AV	54.00	-5.92	1.31 V	86	17.45	30.63
5	4914.00	46.98 PK	74.00	-27.02	1.11 V	54	9.95	37.03
6	4914.00	34.23 AV	54.00	-19.77	1.11 V	54	-2.80	37.03
7	7371.00	51.24 PK	74.00	-22.76	1.84 V	213	8.11	43.13
8	7371.00	38.98 AV	54.00	-15.02	1.84 V	213	-4.15	43.13

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	96.07 PK			1.24 H	194	65.52	30.55
2	*2462.00	86.73 AV			1.24 H	194	56.18	30.55
3	2483.50	61.44 PK	74.00	-12.56	1.24 H	194	30.81	30.63
4	2483.50	45.26 AV	54.00	-8.74	1.24 H	194	14.63	30.63
5	4924.00	44.21 PK	74.00	-29.79	1.52 H	21	7.15	37.06
6	4924.00	33.81 AV	54.00	-20.19	1.52 H	21	-3.25	37.06
7	7386.00	51.24 PK	74.00	-22.76	1.68 H	96	8.11	43.13
8	7386.00	38.20 AV	54.00	-15.80	1.68 H	96	-4.93	43.13

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

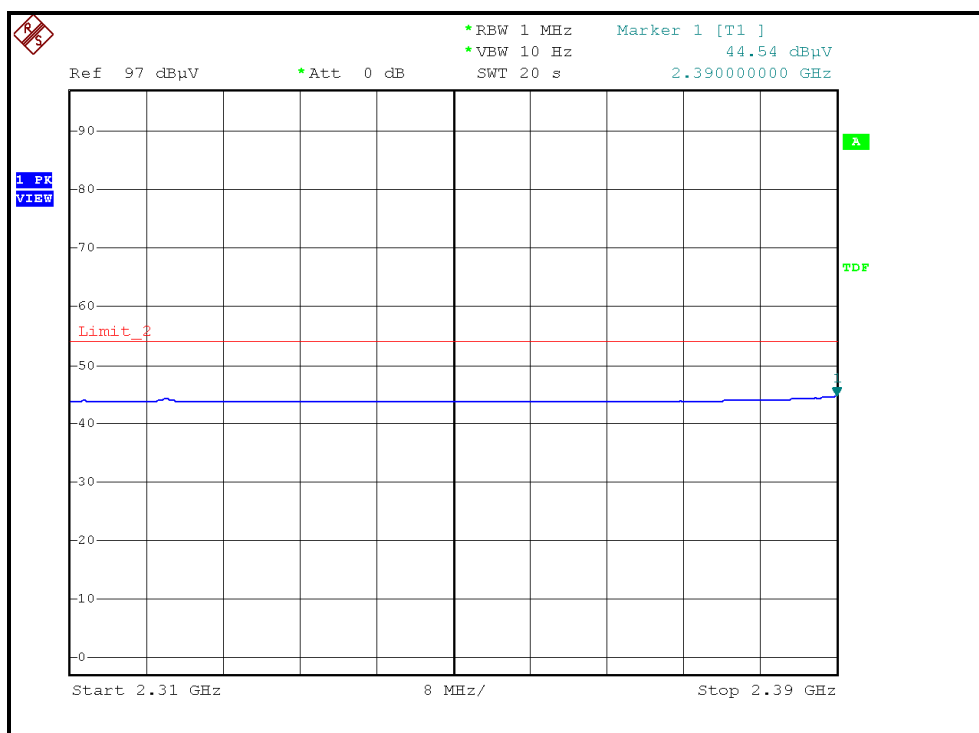
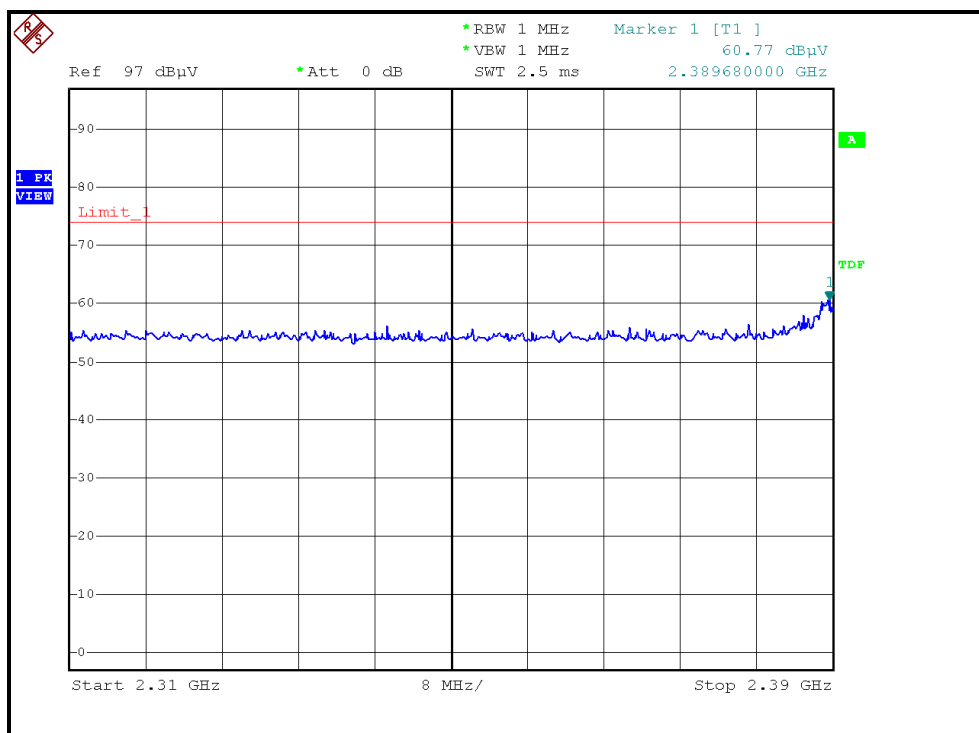
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.43 PK			1.30 V	86	76.88	30.55
2	*2462.00	97.64 AV			1.30 V	86	67.09	30.55
3	2483.50	67.18 PK	74.00	-6.82	1.32 V	85	36.55	30.63
4	2483.50	47.94 AV	54.00	-6.06	1.32 V	85	17.31	30.63
5	4924.00	44.65 PK	74.00	-29.35	1.65 V	214	7.59	37.06
6	4924.00	34.23 AV	54.00	-19.77	1.65 V	214	-2.83	37.06
7	7386.00	51.48 PK	74.00	-22.52	1.02 V	326	8.35	43.13
8	7386.00	39.65 AV	54.00	-14.35	1.02 V	326	-3.48	43.13

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



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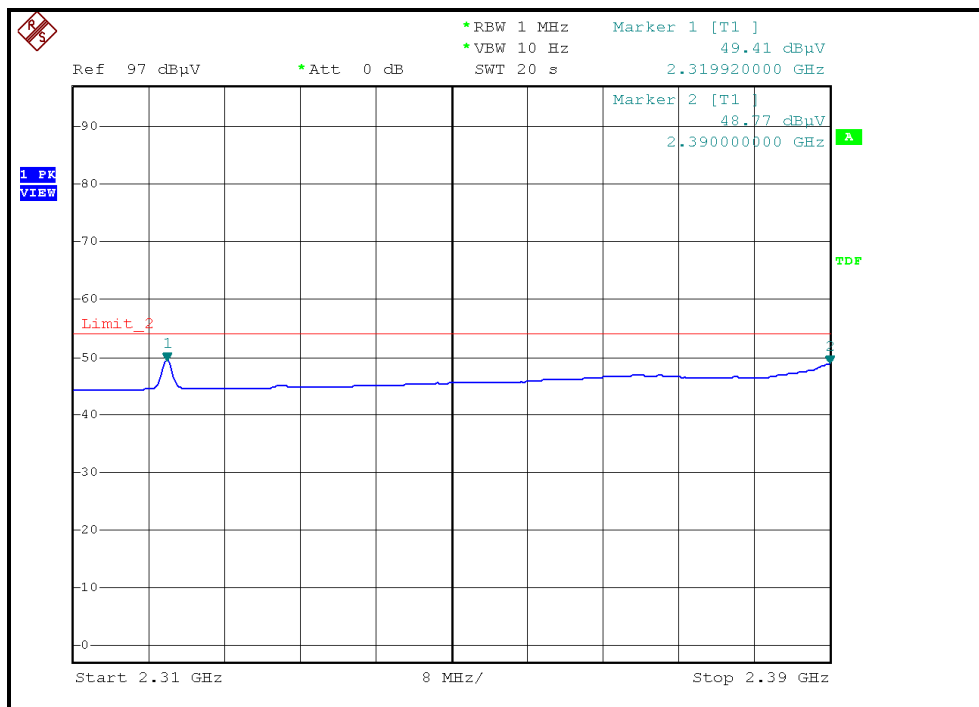
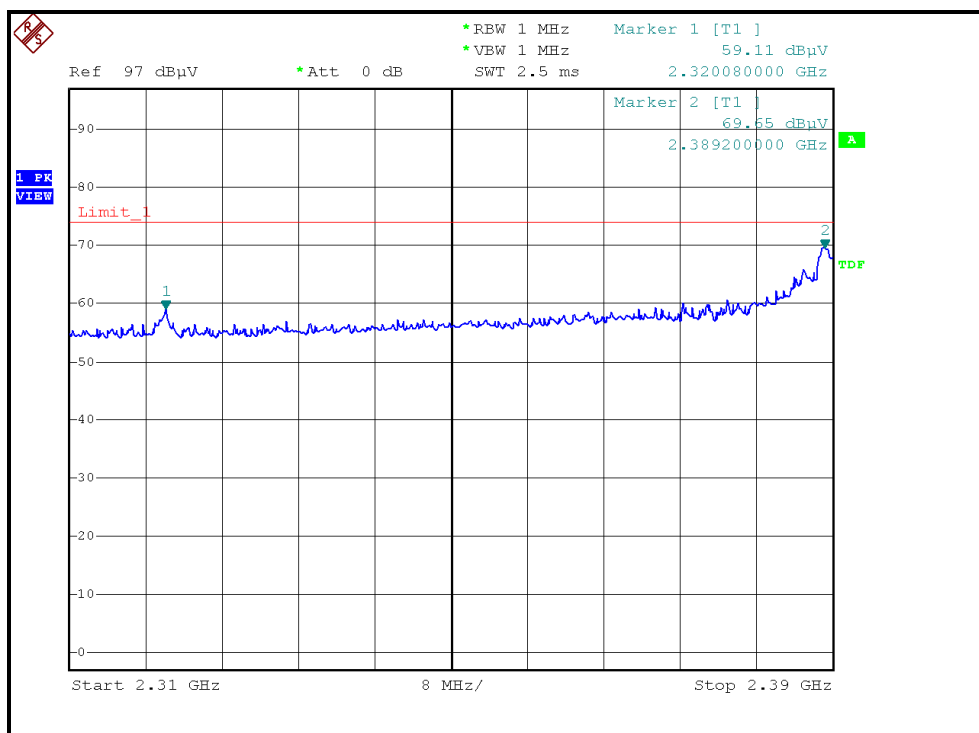
### RESTRICTED BANDEDGE (802.11g MODE, CH1, HORIZONTAL )





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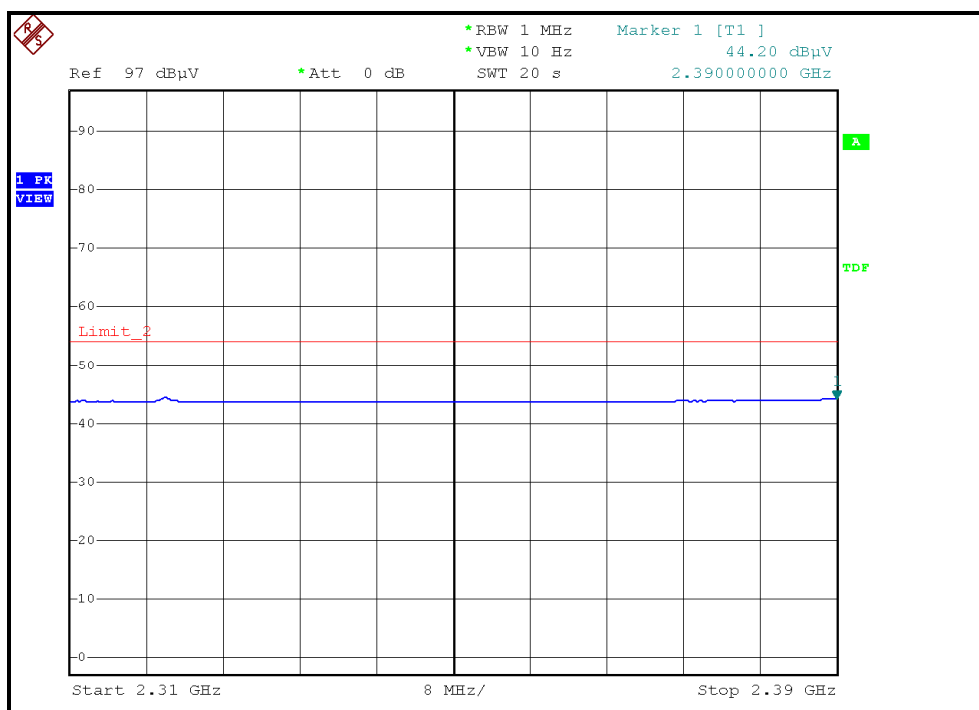
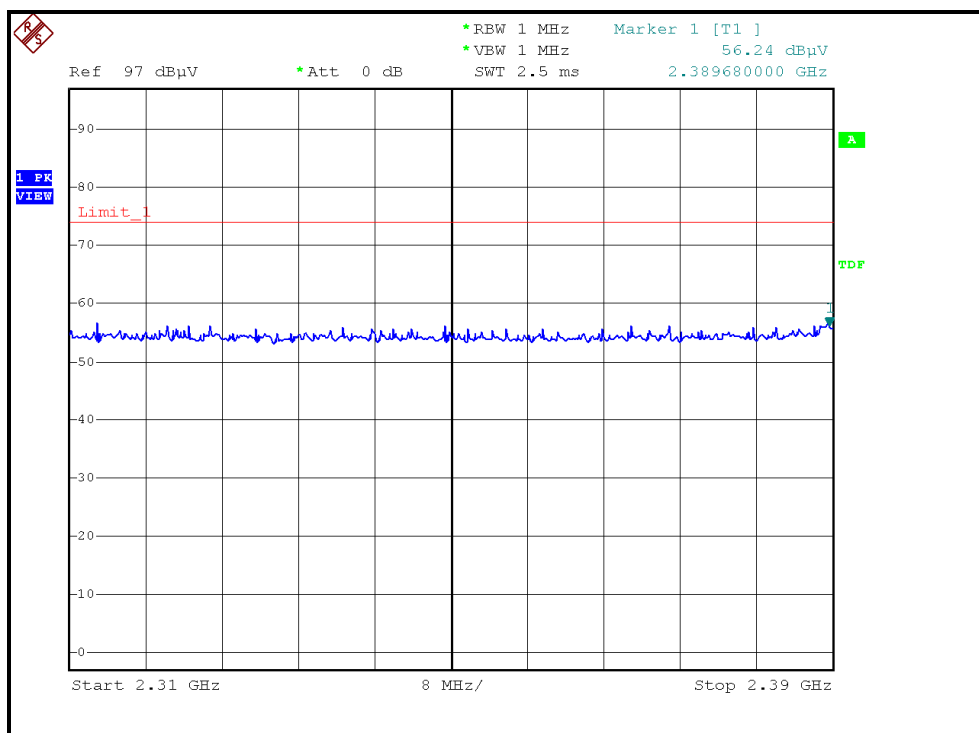
### RESTRICTED BANDEDGE (802.11g MODE, CH1, VERTICAL )





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### RESTRICTED BANDEDGE (802.11g MODE, CH2, HORIZONTAL )





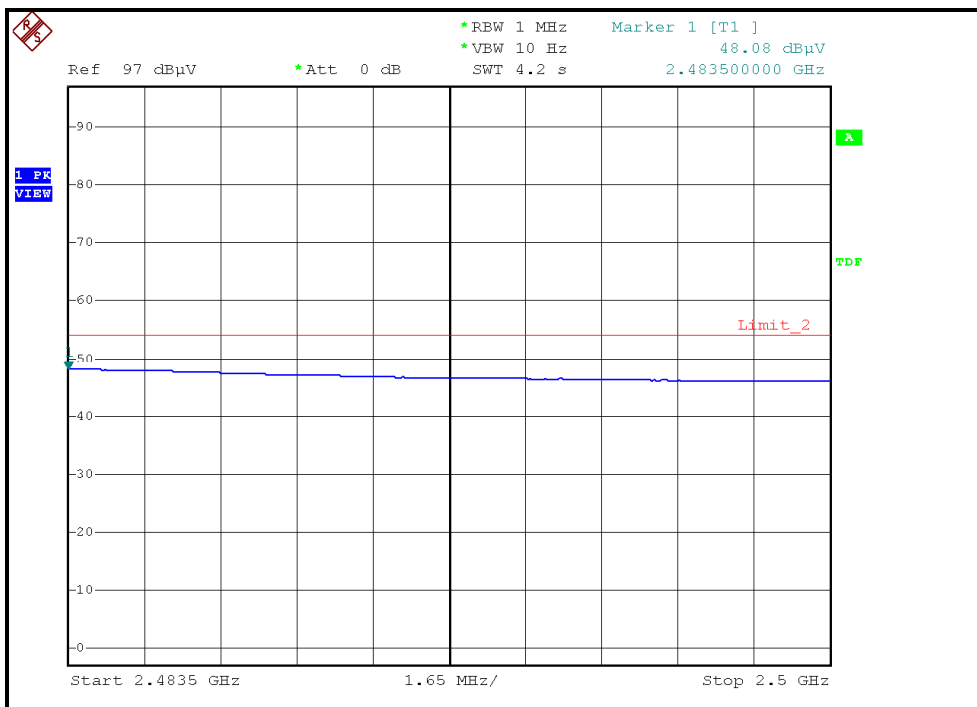
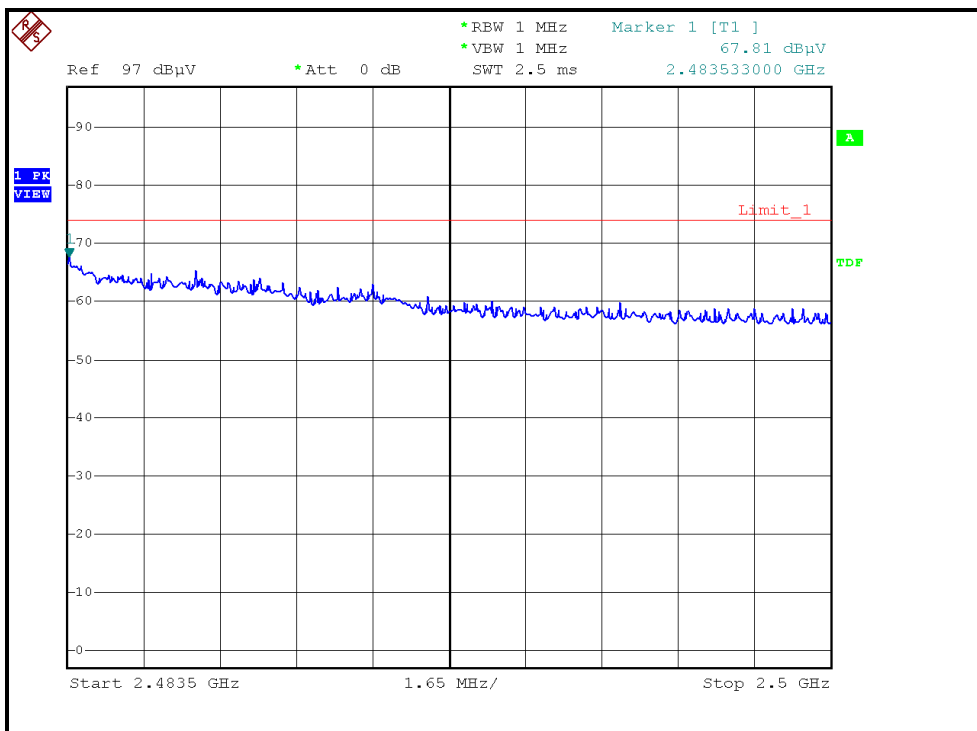






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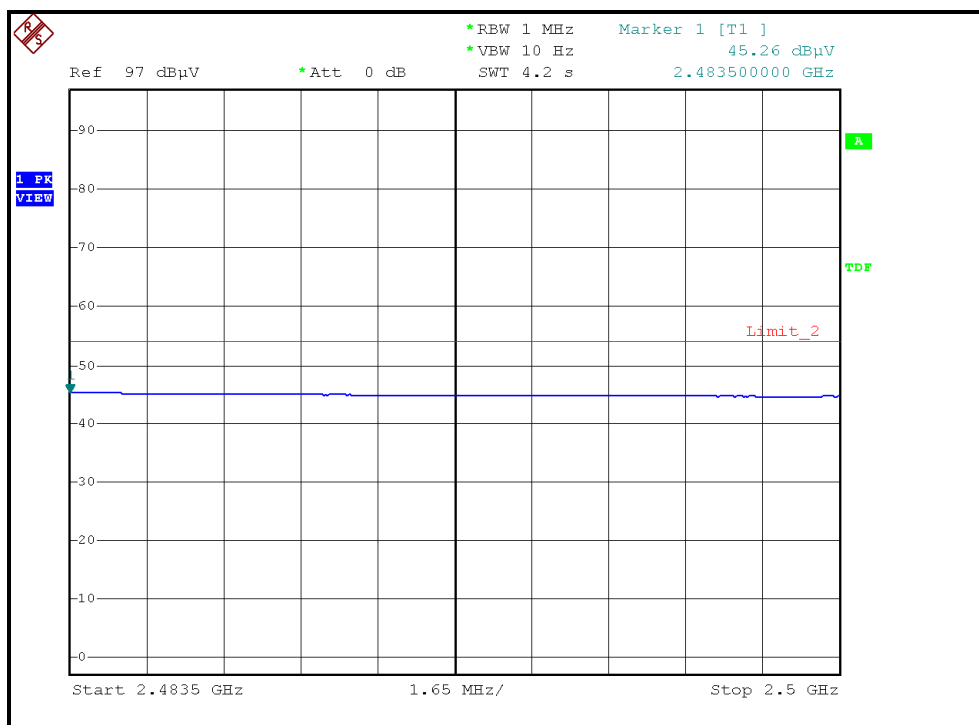
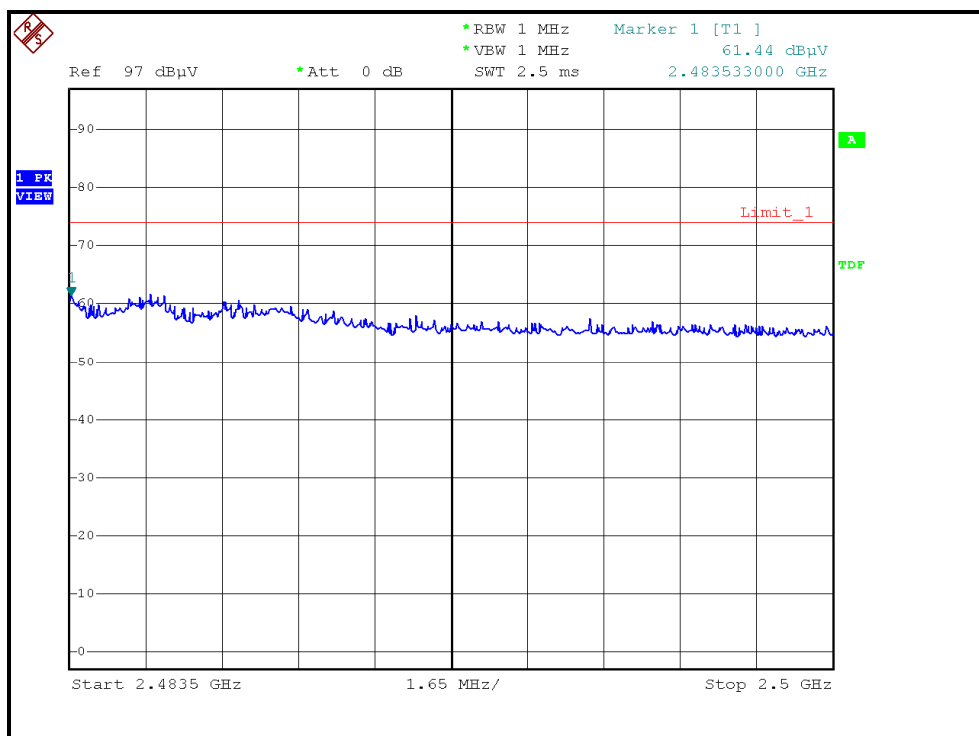
### RESTRICTED BANDEDGE (802.11g MODE, CH10, VERTICAL )





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### RESTRICTED BANDEDGE (802.11g MODE, CH11, HORIZONTAL )







### 4.3 MAXIMUM PEAK OUTPUT POWER

#### 4.3.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

#### 4.3.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 09, 2008	Dec. 08, 2009
Agilent SIGNAL GENERATOR	E8257C	MY43320668	July 14, 2009	July 13, 2010
TEKTRONIX OSCILLOSCOPE	TDS380	B016335	July 13, 2009	July 14, 2010
NARDA DETECTOR	4503A	FSCM99899	NA	NA

**NOTE:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.3.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

#### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation



### 4.3.5 TEST SETUP



### 4.3.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



### 4.3.7 TEST RESULTS

#### 802.11b DSSS modulation

<b>MODULATION TYPE</b>	DBPSK	<b>TRANSFER RATE</b>	1Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 972hPa
<b>TESTED BY</b>	Eric Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	44.668	16.50	30	PASS
6	2437	43.652	16.40	30	PASS
11	2462	44.668	16.50	30	PASS



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### 802.11g OFDM modulation

<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 972hPa
<b>TESTED BY</b>	Eric Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	60.674	17.83	30	PASS
2	2417	84.723	19.28	30	PASS
6	2437	109.648	20.40	30	PASS
10	2457	79.068	18.98	30	PASS
11	2462	59.841	17.77	30	PASS

**Note: Channel 2 and 10 required by manufacture.**





## 5. TEST TYPES AND RESULTS (802.11a, 5725~5850MHz Band)

### 5.1 CONDUCTED EMISSION MEASUREMENT

#### 5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
  2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
  3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 23, 2009	Mar. 22, 2010
Line-Impedance Stabilization Network(for Peripheral)	ENV-216	100071	Nov. 26, 2008	Nov. 25, 2009
Line-Impedance Stabilization Network (for EUT)	ESH3-Z5	848773/004	Nov. 05, 2008	Nov. 04, 2009
RF Cable (JYEBAO)	5DFB	COBCAB-001	Aug. 15, 2009	Aug. 14, 2010
50 ohms Terminator	50	3	Nov. 05, 2008	Nov. 04, 2009
Software	BV ADT_Cond_V7.3 .7	NA	NA	NA

**Note:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.



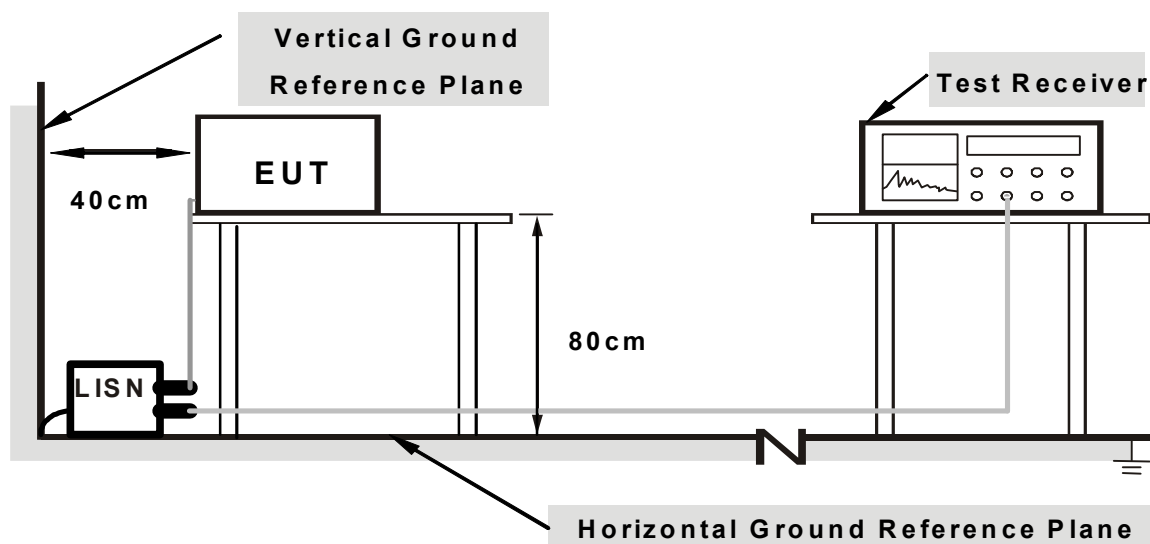
### 5.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit – 20dB) were not recorded.

### 5.1.4 DEVIATION FROM TEST STANDARD

No deviation

### 5.1.5 TEST SETUP



**Note: 1.Support units were connected to second LISN.**

**2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

### 5.1.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

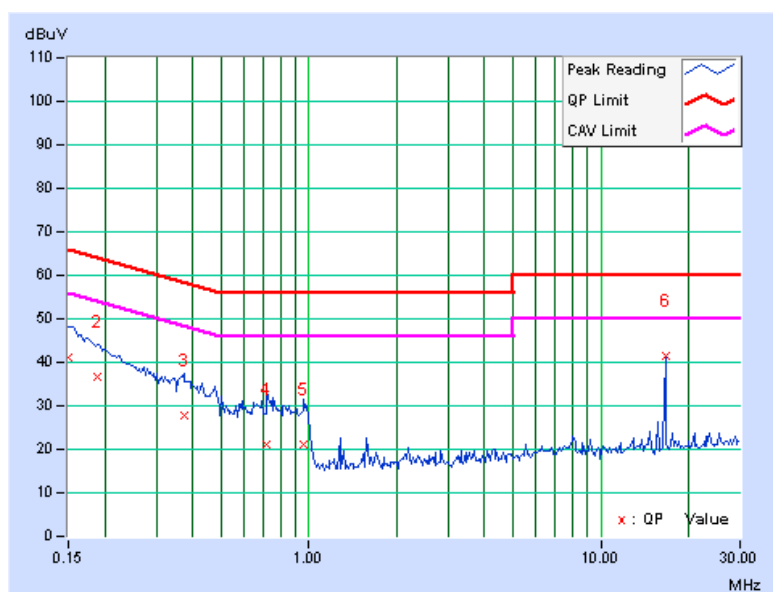
### 5.1.7 TEST RESULTS

#### 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6bps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	28eg. C, 62RH, 965hPa	TESTED BY	Phoenix Huang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.150	9.74	31.21	-	40.95	-	66.00
2	0.189	9.75	27.03	-	36.78	-	64.08	54.08	-27.30	-
3	0.373	9.74	17.91	-	27.65	-	58.44	48.44	-30.79	-
4	0.716	9.75	11.20	-	20.95	-	56.00	46.00	-35.05	-
5	0.959	9.76	11.51	-	21.27	-	56.00	46.00	-34.73	-
+6	16.652	10.00	31.47	-	41.47	-	60.00	50.00	-18.53	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



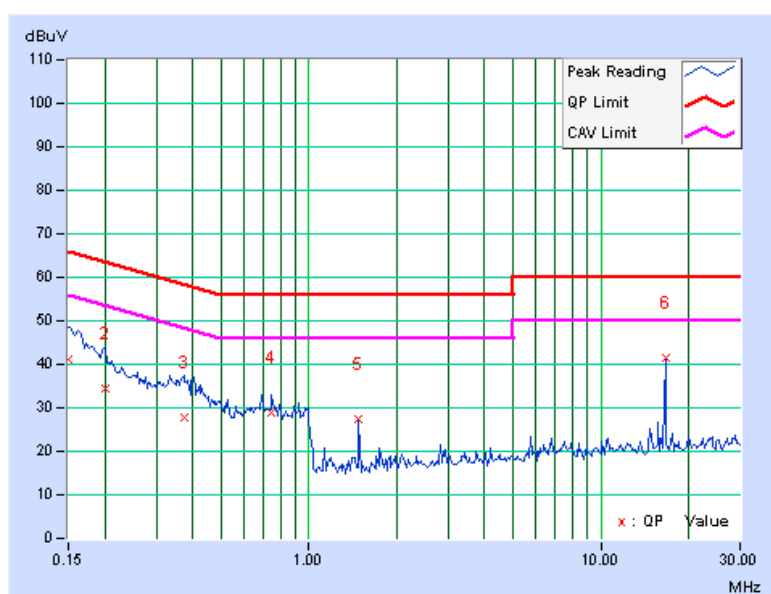


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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	PHASE	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6bps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	28eg. C, 62RH, 965hPa	TESTED BY	Phoenix Huang

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.150	9.73	31.49	-	41.22	-	66.00
2	0.201	9.73	24.87	-	34.60	-	63.58	53.58	-28.98	-
3	0.373	9.73	18.08	-	27.81	-	58.44	48.44	-30.63	-
4	0.748	9.74	19.26	-	29.00	-	56.00	46.00	-27.00	-
5	1.484	9.76	17.51	-	27.27	-	56.00	46.00	-28.73	-
<b>+6</b>	<b>16.652</b>	<b>10.08</b>	<b>31.53</b>	-	<b>41.61</b>	-	<b>60.00</b>	<b>50.00</b>	<b>-18.39</b>	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.





## 5.2 RADIATED EMISSION MEASUREMENT

### 5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



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## 5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 9, 2008	Dec. 8, 2009
Agilent PSA Spectrum Analyzer	E4446A	MY46180622	Apr. 24, 2009	Apr. 23, 2010
HP Pre_Amplifier	8449B	3008A01923	Nov. 10, 2008	Nov. 9, 2009
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Sep. 9, 2009	Sep. 8, 2010
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	April 29, 2009	April 28, 2010
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 09, 2008	Dec. 08, 2009
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2009	Jan. 21, 2010
RF Switches	EMH-011	08009	Oct. 07, 2008	Oct. 06, 2009
RF CABLE (Chaintek)	Sucoflex 106	28077	Aug. 15, 2009	Aug. 14, 2010
RF Cable	8DFB	STCCAB-30M-1GHz	Oct. 07, 2008	Oct. 06, 2009
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
2. The horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.  
3. The test was performed in Open Site No. C.  
4. The FCC Site Registration No. is 656396.  
5. The VCCI Site Registration No. is R-1626.  
6. The CANADA Site Registration No. is IC 7450G-3.



### 5.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**NOTE:**

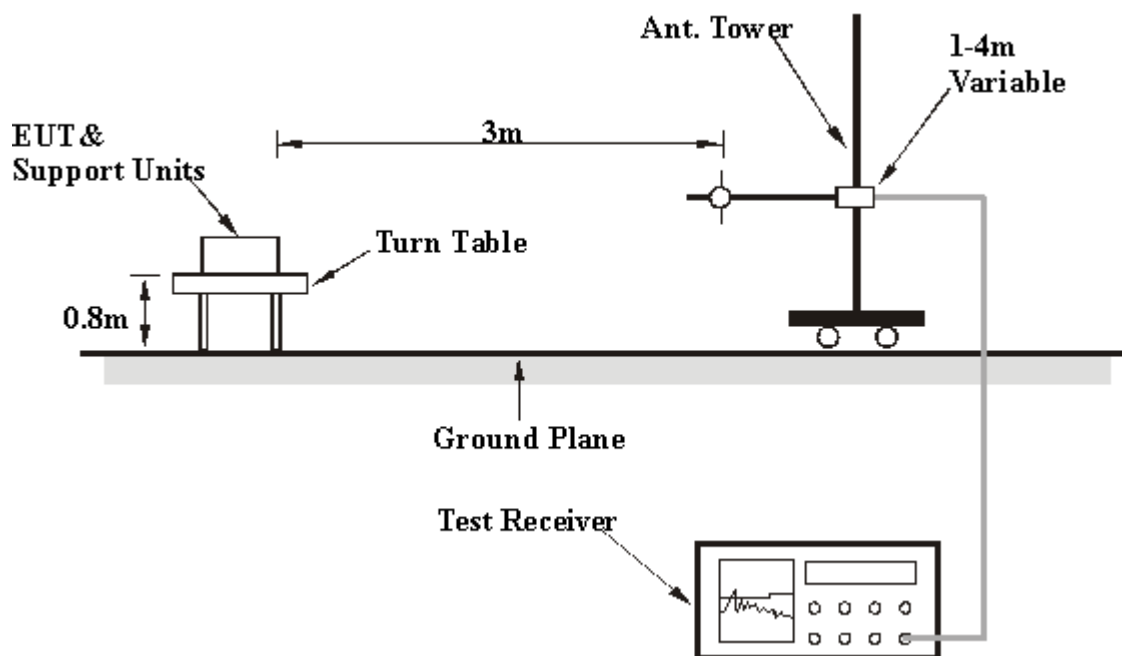
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

### 5.2.4 DEVIATION FROM TEST STANDARD

No deviation



### 5.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

### 5.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6



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## Below 1GHz Test Data

### 5.2.7 TEST RESULTS

#### BELOW 1GHz WORST-CASE DATA : 802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	28.0deg. C, 62.0%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	200.00	28.63 QP	43.50	-14.87	1.73 H	256	16.24	12.39
2	300.00	31.71 QP	46.00	-14.29	1.32 H	152	14.93	16.78
3	400.00	30.56 QP	46.00	-15.44	1.00 H	186	11.06	19.50
4	500.00	28.22 QP	46.00	-17.78	1.00 H	284	5.73	22.49
5	666.67	31.56 QP	46.00	-14.44	1.58 H	235	5.87	25.69
6	833.33	32.35 QP	46.00	-13.65	1.00 H	91	3.87	28.48
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	200.00	25.82 QP	43.50	-17.68	1.00 V	157	13.43	12.39
2	300.00	28.84 QP	46.00	-17.16	1.00 V	221	12.06	16.78
3	400.00	27.54 QP	46.00	-18.46	1.00 V	186	8.04	19.50
4	500.00	27.87 QP	46.00	-18.13	1.00 V	243	5.38	22.49
5	666.67	30.61 QP	46.00	-15.39	1.57 V	168	4.92	25.69
6	833.33	31.82 QP	46.00	-14.18	1.27 V	269	3.34	28.48

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



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### Above 1GHz Test Data

#### 5.2.8 TEST RESULTS

#### 802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	99.28 PK			1.68 H	198	61.32	37.96
2	*5745.00	89.45 AV			1.68 H	198	51.49	37.96
3	11490.00	58.62 PK	74.00	-15.38	1.02 H	333	11.39	47.23
4	11490.00	47.21 AV	54.00	-6.79	1.02 H	333	-0.02	47.23
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	113.27 PK			1.03 V	22	75.31	37.96
2	*5745.00	103.75 AV			1.03 V	22	65.79	37.96
3	11490.00	61.02 PK	74.00	-12.98	1.47 V	258	13.79	47.23
4	11490.00	49.24 AV	54.00	-4.76	1.47 V	258	2.01	47.23

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* ”: Fundamental frequency.
  6. The limit value is defined as per 15.247.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	97.59 PK			1.66 H	199	59.52	38.07
2	*5785.00	87.60 AV			1.66 H	199	49.53	38.07
3	11570.00	59.32 PK	74.00	-14.68	1.24 H	54	12.10	47.22
4	11570.00	47.23 AV	54.00	-6.77	1.24 H	54	0.01	47.22
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	112.98 PK			1.14 V	23	74.91	38.07
2	*5785.00	103.30 AV			1.14 V	23	65.23	38.07
3	11570.00	61.32 PK	74.00	-12.68	1.54 V	24	14.10	47.22
4	11570.00	50.24 AV	54.00	-3.76	1.54 V	24	3.02	47.22

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* ”: Fundamental frequency.
  6. The limit value is defined as per 15.247.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	97.57 PK			1.57 H	136	59.39	38.18
2	*5825.00	87.50 AV			1.57 H	136	49.32	38.18
3	11650.00	58.24 PK	74.00	-15.76	1.11 H	26	11.02	47.22
4	11650.00	46.24 AV	54.00	-7.76	1.11 H	26	-0.98	47.22
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	111.70 PK			1.01 V	12	73.52	38.18
2	*5825.00	101.87 AV			1.01 V	12	63.69	38.18
3	11650.00	65.04 PK	74.00	-8.96	1.02 V	12	17.82	47.22
4	11650.00	51.78 AV	54.00	-2.22	1.02 V	12	4.56	47.22

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.
  6. The limit value is defined as per 15.247.



### 5.3 MAXIMUM PEAK OUTPUT POWER

#### 5.3.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

#### 5.3.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 09, 2008	Dec. 08, 2009
Agilent SIGNAL GENERATOR	E8257C	MY43320668	July 14, 2009	July 13, 2010
TEKTRONIX OSCILLOSCOPE	TDS380	B016335	July 13, 2009	July 14, 2010
NARDA DETECTOR	4503A	FSCM99899	NA	NA

**NOTE:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 5.3.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

#### 5.3.4 DEVIATION FROM TEST STANDARD

No deviation



### 5.3.5 TEST SETUP



### 5.3.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



### 5.3.7 TEST RESULTS

#### 802.11a OFDM modulation

<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 965hPa
<b>TESTED BY</b>	Eric Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
149	5745	20.10	102.329	30	PASS
157	5785	20.30	107.152	30	PASS
165	5825	20.20	104.713	30	PASS





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## 6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

<b>USA</b>	FCC, NVLAP
<b>Germany</b>	TUV Rheinland
<b>Japan</b>	VCCI
<b>Norway</b>	NEMKO
<b>Canada</b>	INDUSTRY CANADA, CSA
<b>R.O.C.</b>	TAF, BSMI, NCC
<b>Netherlands</b>	Telefication
<b>Singapore</b>	GOST-ASIA(MOU)
<b>Russia</b>	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

[www.adt.com.tw/index.5/phtml](http://www.adt.com.tw/index.5/phtml). If you have any comments, please feel free to contact us at the following:

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**Hwa Ya EMC/RF/Safety Telecom Lab:**

Tel: 886-3-3183232

Fax: 886-3-3185050

**Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

The address and road map of all our labs can be found in our web site also



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## **7.APPENDIX-A- MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No any modifications are made to the EUT by the lab during the test.

**---END---**